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The Status of Rhizoecus amorphophalli *Betram, a Little-Known Oriental Mealybug (Homoptera: Pseudococcidae)*

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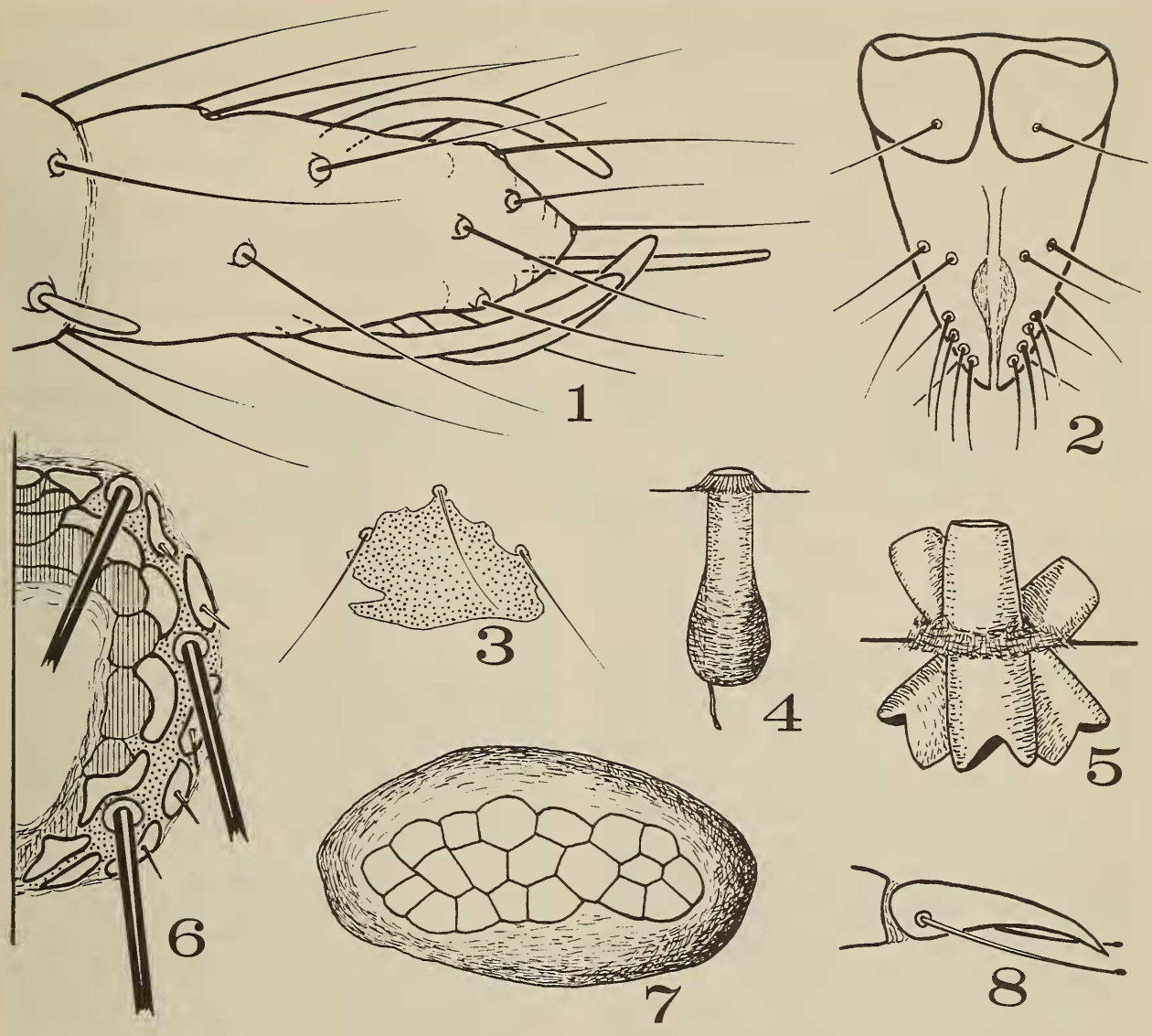
ABSTRACT

Rhizoecus amorphophalli Betram, originally described from Java, is widely distributed in the Pacific area. Comparison of the types with material from Hawaii, India and the Philippines reveals no morphological differences. *Rhizoecus advenus* Beardsley from Hawaii and Micronesia is considered a junior synonym of *Rhizoecus amorphophalli*. The latter is redescribed, illustrated, and a lectotype designated.

Betram (1940) described *Rhizoecus amorphophalli* from Java. In 1946, I transferred the species to *Ripersiella* Tinsley, a genus later synonymized with *Rhizoecus* (Hambleton, 1974). No further mention was made of *R. amorphophalli* until Beardsley (1966) compared it with *Rhizoecus advenus* Beardsley from Hawaii and Micronesia, indicating that they may eventually be synonyms.

A comparison of 5 paratypes of *R. advenus* with the syntypes of *R. amorphophalli* reveals no major diagnostic differences in their morphology. The minor differences in the size of cerores and number of multilocular disk pores that were noted are normal variations in a species. Specimens from India and the Philippines were identical with the syntypes of *R. amorphophalli*, except for size. According to Beardsley (op cit.), *R. advenus* possesses a single circulus on abdominal segment IV and occasionally has a small circulus on segment V. Of 31 specimens examined during this study, 24 possessed 2 circuli. Invariably the circulus on segment V is smaller. For these reasons, *R. advenus* is here considered a junior synonym of *R. amorphophalli*.

This species is widely distributed in the



Figs. 1–8. *Rhizoecus amorphophalli*, female, 1, terminal segments of antenna; 2, rostrum; 3, cephalic plate; 4, tubular duct; 5, tritubular ceroris; 6, anal ring, right half; 7, circulus; 8, hind claw.

Oriental Region and probably was transported by man on roots and tubers of various economically important food plants.

***Rhizoecus amorphophalli* Betram**
Figs. 1–8

Rhizoecus amorphophalli Betram, 1940:267.
Ripersiella amorphophalli: Hambleton, 1946:61.
Rhizoecus advenus Beardsley, 1966:468. **New synonymy.**

Adult female: Broadly ovate. Length, 1.48–1.73 mm; width, 0.73–0.93 mm. Antennae 6-segmented, broadly separated, average length of segments in microns: I, 33; II, 23; III, 33; IV, 18; V, 17: VI, 42; apical segment about twice as long as wide, with 3 moderately stout sensory setae and 1 spinelike sensory seta; segment V with 1 short, small sensory seta. Interantennal space equal to combined length of segments IV–VI. Eyes small, pigmented, about 10μ in diameter. Rostrum of medium size, 63μ long, 50μ wide; rostral loop extending to or slightly beyond 2nd coxae. Cephalic plate irregularly triangulate, 20μ long, 30μ wide, with 3 prominent body setae on its periphery. Dorsal ostioles strongly sclerotized.

Legs small, average length of segments of hind pair in microns: Trochanter, 40; femur, 91; tibia, 81; tarsus, 53; claw, 17; claw digitules elongate, dilated at extremities, extending beyond claws.

Normally with 2 stout, truncate, strongly sclerotized circuli, the larger on abdominal segment IV averaging about 20μ long, 30μ wide, one on segment V smaller, sometimes absent, averaging 15μ long, 21μ wide, both prominently reticulated. Anal lobes weakly developed, unsclerotized, with 3 elongate setae, longest about 60μ long, trilocular pores usually crowded at their bases. Anal ring small, 35μ in diameter, its setae 50–58μ long; outer portion of anal ring with 12–14 elongate oval to sinuate cells, with spicules; inner portion of ring with 10 much larger, irregularly shaped cells adjacent to a series of

globular, darkened cells. Tritubular cerores of 2 sizes, their ducts short, stout, bifurcate at bases, maximum length about 7μ, evenly distributed, varying between 117–140, larger size more abundant dorsally, smaller size occurring on both surfaces. Multilocular disk pores confined to venter of abdominal segments VII–IX, 13–23 borne transversly along posterior margin of segment VII, 27–42 occurring on VIII and IX. Tubular ducts elongate, with broadly rounded sclerotized bases, length about 6μ, widely distributed on both surfaces over entire body; more common ventrally, 5–7 per segment. Trilocular pores almost circular in outline, more abundant dorsally, sparse around legs and intersegmentally. Body setae variable in size, longest on venter about 25μ, shorter and finer on dorsum, about 15μ long.

Lectotype female—From 3 syntypes on slide No. 1, remounted in 1978, I designate the adult female on the extreme right as lectotype. The slide labeled as follows: "*Amorphophalus* I '38, Bogar. leg. Bot. A. P. L., CCV 1290, *Rhizoecus amorphophalli* det. Betram" is to be deposited in the Agricultural Experiment Station, Bogar. *Paralectotypes*: 10 on 3 slides taken with lectotype, and 8 newly mounted females from original preserved type material, 6 in Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands and 2 in U. S. National Museum, Washington, D. C.

Specimens Examined.—In addition to the type material from Bogar, the following specimens were examined: 5 paratypes of *Rhizoecus advenus* Beardsley, Honolulu, Hawaii, 27-VIII-1959, J. W. Beardsley, 2 ♀♀, intercepted at Washington, D. C. from Java, 6-III-1925, W. V. Reed 9 ♀♀ intercepted at Los Angeles, Calif., 30-V-1973 from the Philippines, J. R. Davidson, 6 ♀♀ intercepted at New York from India, 29-VI-1976, D. Femiano.

Host Plants.–Amorphophallus variabilis, Colocasia esculenta (Araceae), *Cordyline terminalis* (Agavaceae), *Curcuma longa, Kaempferia galanga* (Zingiberaceae).

Distribution.—Caroline Island (Truk), Hawaii, India, Java, Philippines.

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